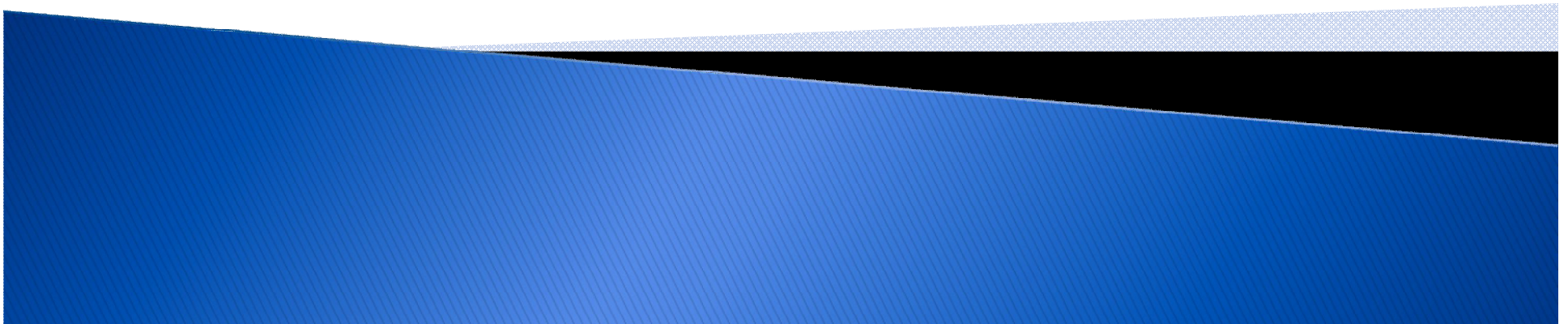


**School Nurse Association of  
North Carolina  
report to  
North Carolina Public Health  
Study Commission**

February 4, 2010



## Presenters:

**Martha Keehner Engelke, RN, PhD**, Associate Dean for Research and Scholarship, Richard R. Eakin Distinguished Professor of Nursing, ECU College of Nursing

**Martha Guttu, MSN, RN, BC**, School Nurse Consultant, Northeast Region

**Sue Lynn Ledford, RN, BSN, MPA**, Community Health Director, Wake County; Immediate Past President School Nurse Association of NC

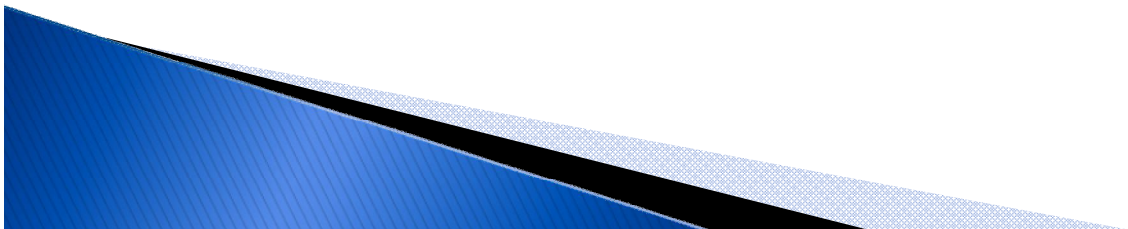
**Liz Newlin, RN, BSN, NCSN**, School Nurse, Wake County; Legislative Chair, School Nurse Association of NC

Thank you to Jessica Gerdes RN, MS, NCSN, State School Nurse Consultant for assisting with data from the North Carolina School Health Services Annual Report



# Presentation Goals:

- ▶ Review outcome data from the school nurse case management project funded by the Kate B. Reynolds Health Care Trust
- ▶ Review the current status of school nursing in 2010
- ▶ Discuss cost effective ways that school nurses can be used to lessen the health dollar burden, improve school attendance, improve student physical and mental health, and improve graduation rates in North Carolina



# Trends

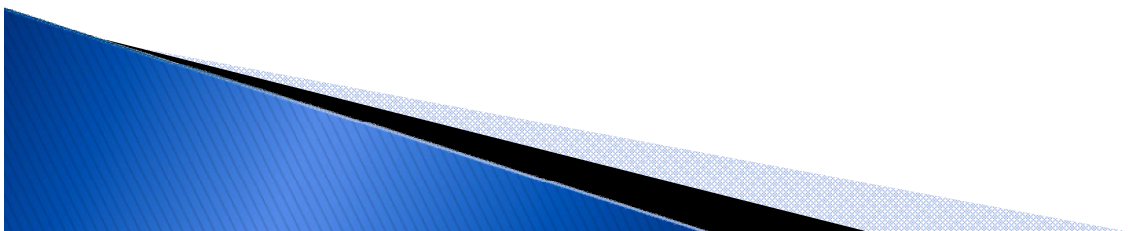
- ▶ Increasing number and severity of illness in students who attend school
- ▶ Increase of social morbidities (substance abuse, homicide, suicide, child abuse and neglect, and violence)
- ▶ Increase of psychosocial and developmental problems (depression, eating disorders)
- ▶ Increasing numbers of working parents



# Trends

- ▶ School nurses report 17% of the students in NC public schools have a chronic health condition or special health care need. \*
- ▶ School nurses are essential to address the complexity and diversity of student health needs.

Source: NC DHHS, Division of Public Health, North Carolina School Health Services Annual Report, 2006-07, 2007-08, & 2008-09 (*in print*)



# Chronic Illness

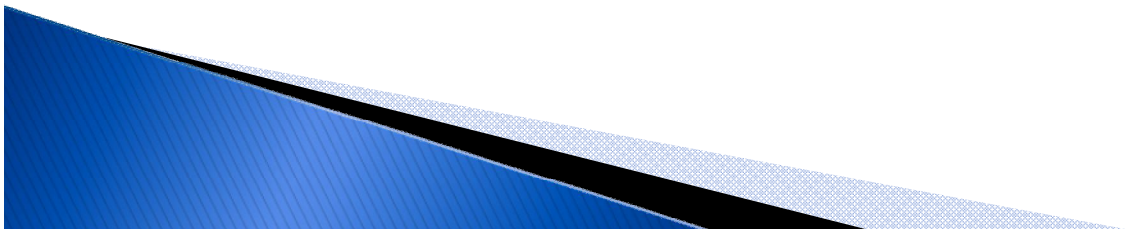
- 86,000 students with asthma  
(# 1 reason for absenteeism\*)
- 4,300 students with diabetes
- 1,500 students with life threatening allergies

Source: NC DHHS, Division of Public Health, North Carolina School Health Services Annual Report, 2006-07, 2007-08, & 2008-09 (*in print*)



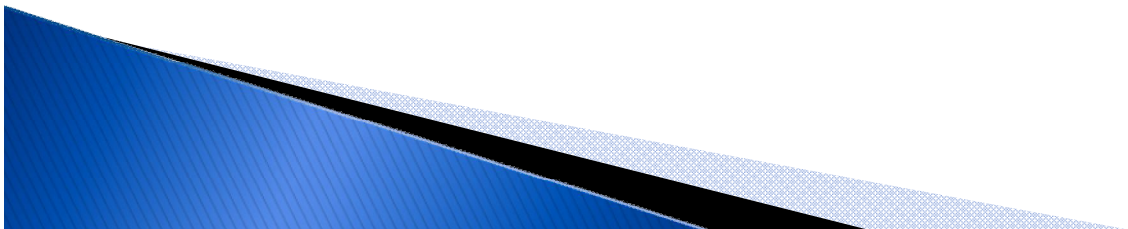
# School Nurse Case Management: Goals

- ▶ Safe School Environment
- ▶ Symptom Management
- ▶ Self-care
- ▶ Academic Success
- ▶ Supportive Family/Relationships
- ▶ Optimal Health Care Utilization



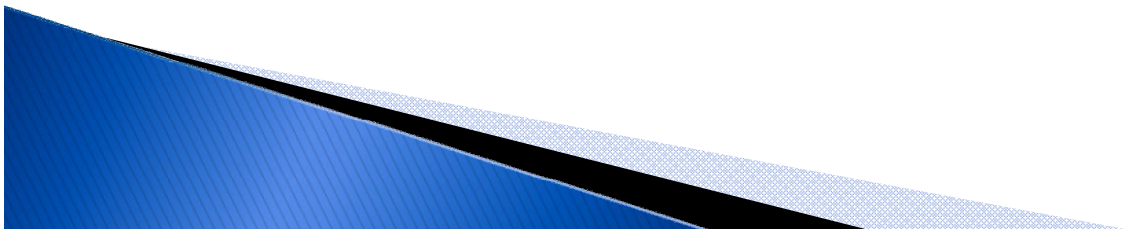
# School Nurse Case Management: Interventions

- ▶ Direct Care
- ▶ Student Education/Counseling
- ▶ Parent/Family Visits
- ▶ Teacher/Staff Education
- ▶ Health Care Coordination



# Outcomes of Case Management

- ▶ The school environment is safer for the child and the child learns better.
- ▶ Teachers and parents indicate that the child manages the illness better.
- ▶ Improved Quality of Life
- ▶ Improved Grades
- ▶ However, when a nurse has more than one school, children receive fewer services and they are at risk.



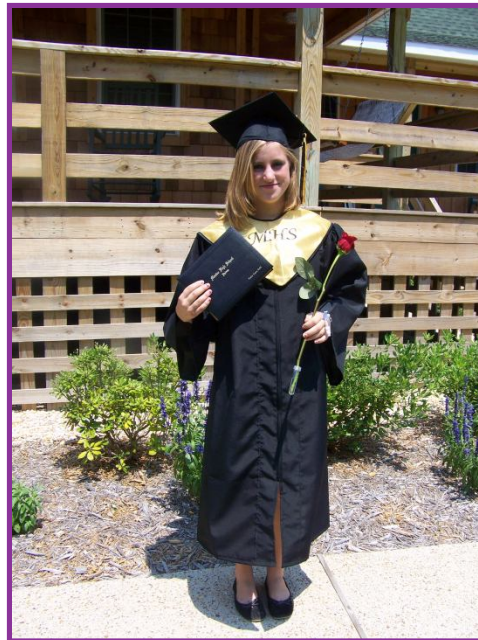
# Children with Diabetes

Category of Intervention	1 school (Mean # Visits)	> 1 school (Mean # Visits)	P value
Direct Care	91.93	24.33	.000
Student Education/Counseling	101.21	50.10	.002
Parent/Family	14.08	8.72	.017
Teacher/Staff Education	11.46	12.87	NS
Health Care Coordination	3.33	4.19	NS
Total Visits	53.86	22.77	.000



# Case Management and Academics

- ▶ Children with diabetes who receive case management have improved grades particularly if their grades are low.
- ▶ Case example:



# Student/ Nurse Ratio 2005-2009

	2005-2006	2006-2007	2007--2008	2008-2009
Schools	2,227	2,338	2,354	2,399
Students	1,363,696	1,386,363	1,404,957	1.4 million
School Nurses	867	1,034	1,146	1,231
Ratio	1:1571	1:1340	1:1225	1:1207

# Training of School Staff: Medical management

## Daily management of students with diabetes

- Blood glucose (sugar) monitoring
- Insulin administration

## Daily management of students with asthma

- Inhaler or nebulizer treatment administration

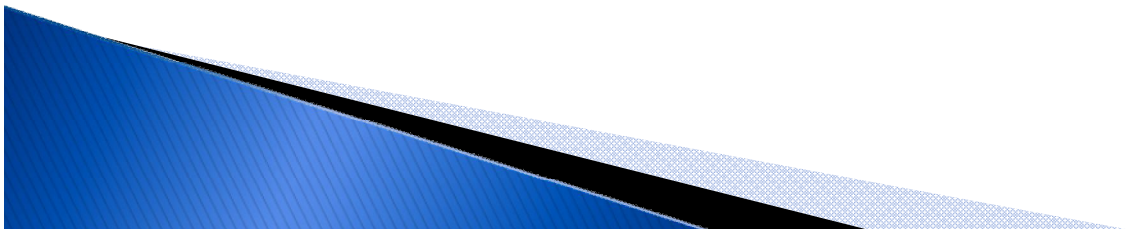
## Daily management of students with tube feeding

## Daily management of students with bladder catheterization



# Emergency Medical Management

- ▶ Glucagon injection-Diabetes care for the student with low blood sugar
- ▶ Diastat Administration-Care for the student having a seizure
- ▶ EPIPEN injection- care for the student having an allergic reaction



# Pregnancy in the School Age Child

- 4,904 Pregnant students
- 11% increase
- Number of those that drop out

Thank you

School Nurse Funding Initiative  
(SNFI)

212 positions

Child & Family Support Team Initiative  
(CFST)

100 positions

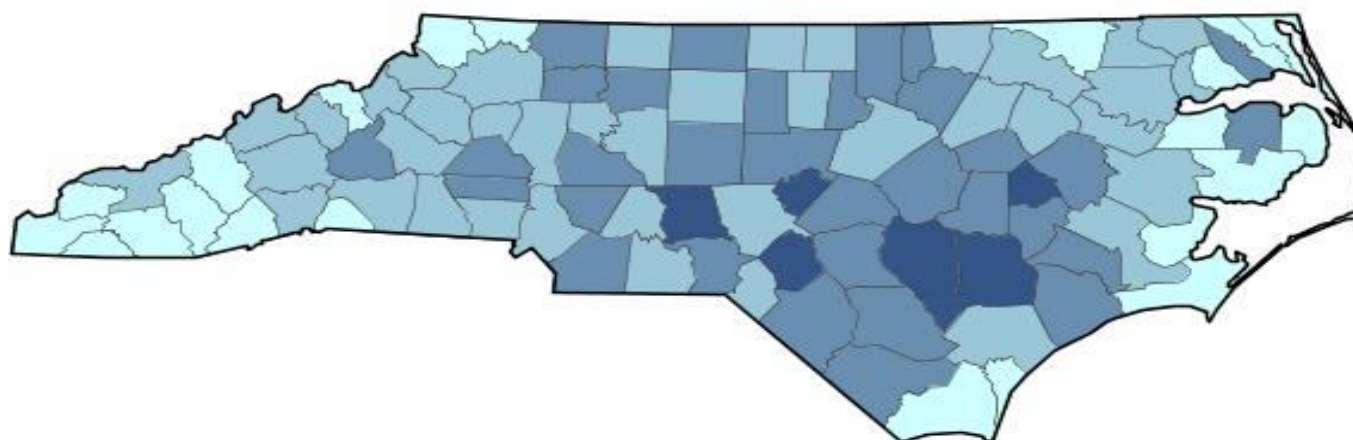
Total School Nurses 07-08 School Year  
1,147

(SNFI and CFST partnership positions included in this number)

34% of positions in the state funded by state monies 2007-2008  
school year



# Percent of Children without Health Insurance – 2007



■ 17.8% - 24.0% ■ 13.4% - 17.8% ■ 10.9% - 13.4% ■ 6.4% - 10.9%

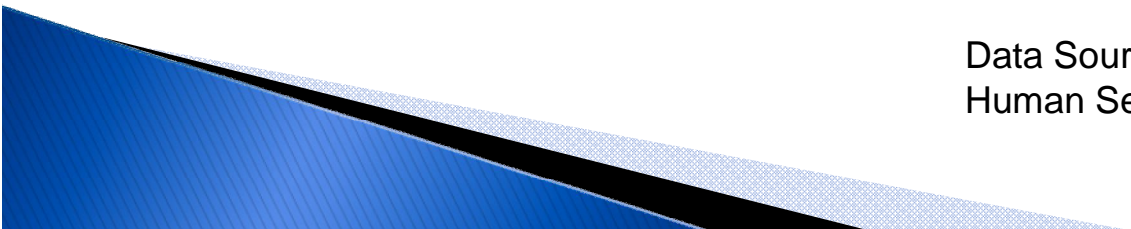
## Percent of Children without Health Insurance (Percent) – 2007

Action for Children North Carolina  
KIDS COUNT Data Center, [www.kidscount.org/datacenter](http://www.kidscount.org/datacenter)  
A Project of the Annie E. Casey Foundation

# Example

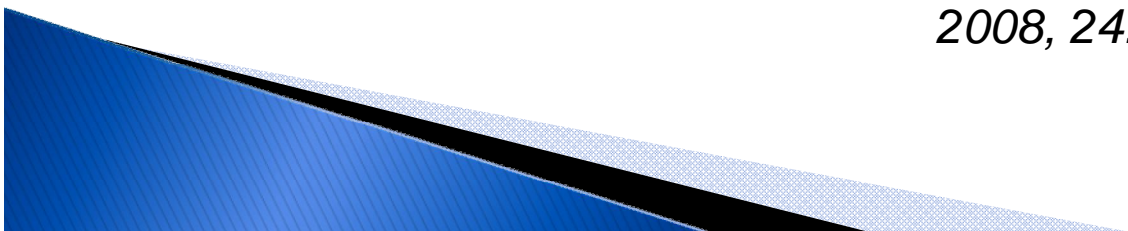
- ▶ Asthma: number one medical reason for absenteeism
- ▶ Average cost of an Emergency Department visit:\$1398
- ▶ 35,388 ED visits for asthma (4-18years old)
- ▶ cost of \$49,472,424
- ▶ Mean stay for asthma admission:2 days
- ▶ Mean cost for that stay \$6,214
- ▶ Cost per student/year for a school nurse:(1:750 ratio):\$87

Data Sources: NC Detect and NC Health and Human Services Asthma Section



- ▶ 5% of students seen by the school nurse were sent home and 18% of students seen by an unlicensed school employee were sent home.
- ▶ more students could be kept in school when school nurses provide assessment and interventions aimed at helping students who become ill or injured while at school, thus increasing school attendance and promoting academic success.

*Source: The Journal of School Nursing.  
2008, 24. pp 290-297.*



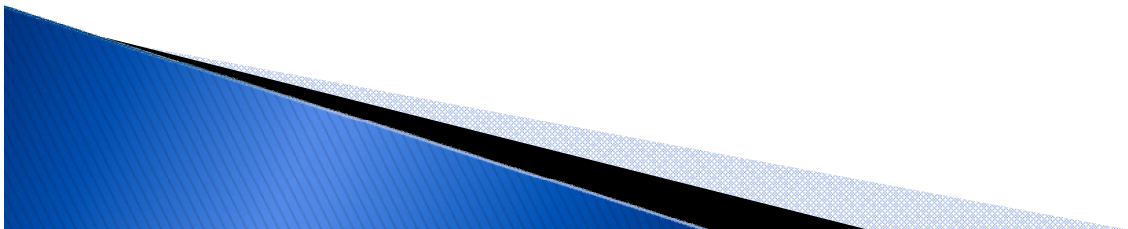
# Putting the pieces together

- ▶ Case management studies have demonstrated that where there is a nurse in every school, student health, school attendance, and student academic performance have improved.
- ▶ Statewide review indicated that funding sources for school nurses are varied and untracked.
- ▶ Medicaid funding is not being utilized to its fullest (there is a portion of the exceptional student population with health needs where Medicaid billing is being underutilized).



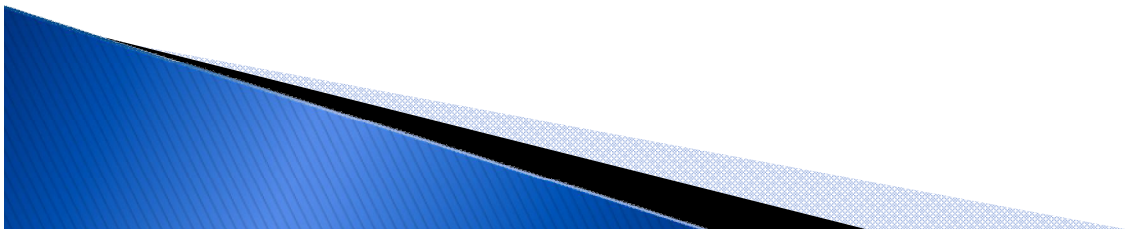
# Putting the Pieces together

- The school nurse can a cost effective way to deliver health care to students.
- The school nurse can be a positive influence on student health. They can be particularly valuable in keeping children with chronic health conditions in school.
- The school nurse can be a positive influence to keep the pregnant teen and parenting teen in school.
- The school nurse is essential in providing a safe school environment



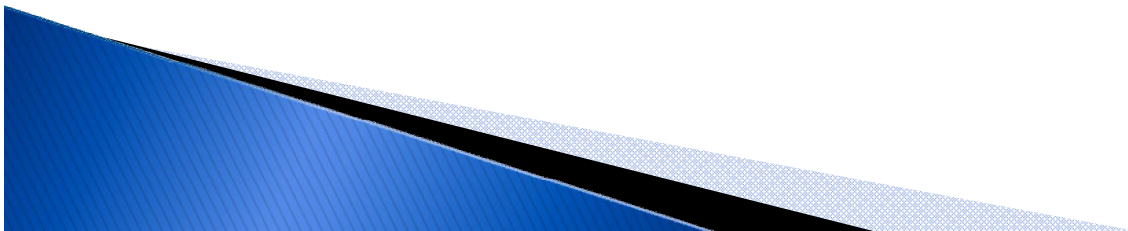
# Drop out prevention

- School Nurses can be utilized to work with students at risk for drop out
- Students with health care needs that have been retained
- Students with poor attendance (best indicator in student success)
- Pregnant and parenting teens



# How can we work together?

- ▶ Partner with Legislative leadership
  - Increase the capability of school nurses to track outcomes/data
  - Identify and explore potential funding streams
  - Resource



# Our Goal is your Goal

To assure we graduate  
healthy, educated, tax  
paying citizens

